Report Date: 15 Nov 2013

Summary Report for Individual Task
052-243-1602
Perform a Preliminary Site Survey (Topographic/Radial Survey) with a Total Station and Survey Controller
Status: Approved

Condition: On a proposed construction site, given a total station surveying instrument with accessories, survey controller, tripod, target set, tape measure, one additional personnel to perform as rodman and set up the backsight, total station operator's manual, and Technical Manual (TM) 3-34.55. This task should not be trained in MOPP.

Standard: Perform a preliminary site survey by collecting all necessary data to create an accurate digital terrain model.

Special Condition: This task should be executed simultaneously with individual task number #052-243-1604, Perform as a Rodman During Conventional Surveying Observations.

Safety Level: Low

MOPP: Never

Task Statements

Cue: None

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: None

Performance Steps

1. Select a location on the job site that will provide maximum visibility to accurately capture required observations.
   Note: This location must occupy a known point or have visibility of two known points for a Free Station Establishment.

2. Instruct the rodman to set up a target over the backsight point.

3. Set up the total station.

   a. Set up the tripod over a known point.

   b. Install the total station on the tripod.

   c. Use the tape measure to determine the height of the total station from the ground.

   d. Power on the total station by pressing the power key.

   e. Fine-level the total station when prompted.

4. Connect the survey controller to the total station using the provided data cable.

5. Perform a station establishment on the occupied known point using the survey controller.

   a. Perform "Station Set-up" with the survey controller.

      (1) Input the admininstrative data for the current occupied point.

      (2) Sight the total station on backsight target and press the A/M key to measure the distance to the backsight point.

      (3) Press the STO key to store the observation.

   b. Perform "Resection" with the survey controller.

      (1) Input the admininstrative data for the current occupied point.

      (2) Sight the total station on backsight target and press the A/M key to measure the distance to the backsight point.

      (3) Press the STO key to store the observation.
      Note: Once you have selected "Store", the "Results" page will automatically be displayed and give the result for Horizontal Angle (HA) and Vertical Angle (VA).

      (4) Review the results as they are displayed in Northing (N), Easting (E), Elevation (Elev), and the Standard Error.
      Note: The results of the Standard Error must not exceed 0.1. If 0.1 is exceeded, perform "Resection" again to achieve a smaller Standard Error.

      (5) Press the STO key to store the results of the "Resection".

6. Collect all observable points from the current occupied station necessary to create the digital terrain model.
   Note: Observable points may be, but are not limited to: Roads, Buildings, Sidewalks, Above and Below Ground Utilities, Waterways, Tree Lines, Large Trees (+6").

a. Set up the survey controller to measure a point.

b. Instruct the rodman to plumb the prism pole over the point/feature.

c. Sight the total station on the prism and select "Measure".

d. Store the observed point.

e. Instruct the rodman to move to the next observable point until all points/features have been captured.

7. Power down the total station.

Note: If you are not able to fully capture all required points from your current position, move to and occupy a new station to collect additional points.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: Score the Soldier GO if all steps are passed (P). Score the Soldier NO-GO if any step is failed (F). If the Soldier fails any step, show them how to do it correctly.

Evaluation Preparation: Setup: Provide the Soldier with the items that are listed in the condition statement. Ensure that all safety precautions are followed. Prepare the testing site and equipment in advance to ensure that the task standard can be met.

Briefing: Give the Soldier a safety briefing and read the task, condition, and standard before starting the test.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Selected a location on the job site that provided maximum visibility to accurately capture required observations.			
2. Instructed the rodman to set up a target over the backsight point.			
3. Assembled the total station.			
4. Connected the survey controller to the total station using the provided data cable.			
5. Performed station establishment with the survey controller.			
6. Collected all observable points for the current occupied station.			
7. Powered down the total station.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	TM 3-34.55	Construction Surveying	Yes	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. Prior to class, instructors are to conduct an Environmental Risk Assessment IAW FM 3-100.4. The assessment should be recorded on the Risk Management Worksheet found in Appendix F of FM 3-100.4. During the assessment, instructors should be on the lookout for environmental hazards, Environmental hazards include all activities that may pollute, create negative noise-related effect, degrade archaeological, cultural resources, negatively affect threatened or endangered species' habitats.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines

IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. All operations will be performed to protect and preserve Army personnel and property against accidental loss. Procedures will provide for public safety incidental to Army operations and activities and safe and healthful work places, procedures, and equipment.

Prerequisite Individual Tasks : None

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
052-243-1604	Perform as a Rodman During Conventional Surveying Observations	052 - Engineer (Individual)	Reviewed
052-243-1248	Perform a Traverse Survey	052 - Engineer (Individual)	Analysis
052-243-1512	Establish Temporary Control Points	052 - Engineer (Individual)	Analysis
052-243-1543	Set Up a Target Set	052 - Engineer (Individual)	Analysis
052-243-1546	Operate the Automated Integrated Surveying Instrument (AISI)	052 - Engineer (Individual)	Analysis

Supported Individual Tasks :

Task Number	Title	Proponent	Status
052-243-3420	Post-Process Automated Integrated Surveying Instrument (AISI) Data	052 - Engineer (Individual)	Analysis
052-243-1604	Perform as a Rodman During Conventional Surveying Observations	052 - Engineer (Individual)	Reviewed
052-243-1550	Perform an Intersection with an Automated Integrated Surveying Instrument (AISI)	052 - Engineer (Individual)	Analysis
052-243-1513	Perform Layout of a Construction Project	052 - Engineer (Individual)	Approved

Supported Collective Tasks : None

ICTL Data :

ICTL Title	Personnel Type	MOS Data
12T10, Technical Engineer Specialist, Skill Level 1	Enlisted	MOS: 12T, Skill Level: SL1, Duty Pos: KIR